

2012 - Present

# RISE 40 & X9

---

Service Manual



# SRAM LLC WARRANTY

## EXTENT OF LIMITED WARRANTY

Except as otherwise set forth herein, SRAM warrants its products to be free from defects in materials or workmanship for a period of two years after original purchase. This warranty only applies to the original owner and is not transferable. Claims under this warranty must be made through the retailer where the bicycle or the SRAM component was purchased. Original proof of purchase is required.

**Except as described herein, SRAM makes no other warranties, guarantees, or representations of any type (express or implied), and all warranties (including any implied warranties of reasonable care, merchantability, or fitness for a particular purpose) are hereby disclaimed.**

## LOCAL LAW

This warranty statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state (USA), from province to province (Canada), and from country to country elsewhere in the world.

To the extent that this warranty statement is inconsistent with the local law, this warranty shall be deemed modified to be consistent with such law, under such local law, certain disclaimers and limitations of this warranty statement may apply to the customer. For example, some states in the United States of America, as well as some governments outside of the United States (including provinces in Canada) may:

- a. Preclude the disclaimers and limitations of this warranty statement from limiting the statutory rights of the consumer (e.g. United Kingdom).
- b. Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations.

## For Australian customers:

This SRAM limited warranty is provided in Australia by SRAM LLC, 1333 North Kingsbury, 4th floor, Chicago, Illinois, 60642, USA. To make a warranty claim please contact the retailer from whom you purchased this SRAM product. Alternatively, you may make a claim by contacting SRAM Australia, 6 Marco Court, Rowville 3178, Australia. For valid claims SRAM will, at its option, either repair or replace your SRAM product. Any expenses incurred in making the warranty claim are your responsibility. The benefits given by this warranty are additional to other rights and remedies that you may have under laws relating to our products. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

## LIMITATIONS OF LIABILITY

To the extent allowed by local law, except for the obligations specifically set forth in this warranty statement, in no event shall SRAM or its third party suppliers be liable for direct, indirect, special, incidental, or consequential damages.

## LIMITATIONS OF WARRANTY

This warranty does not apply to products that have been incorrectly installed and/or adjusted according to the respective SRAM user manual. The SRAM user manuals can be found online at [sram.com](http://sram.com), [rockshox.com](http://rockshox.com), [avidbike.com](http://avidbike.com), [truvativ.com](http://truvativ.com), or [zipp.com](http://zipp.com).

This warranty does not apply to damage to the product caused by a crash, impact, abuse of the product, non-compliance with manufacturers specifications of usage or any other circumstances in which the product has been subjected to forces or loads beyond its design.

This warranty does not apply when the product has been modified, including, but not limited to any attempt to open or repair any electronic and electronic related components, including the motor, controller, battery packs, wiring harnesses, switches, and chargers.

This warranty does not apply when the serial number or production code has been deliberately altered, defaced or removed.

This warranty does not apply to normal wear and tear. Wear and tear parts are subject to damage as a result of normal use, failure to service according to SRAM recommendations and/or riding or installation in conditions or applications other than recommended.

## Wear and tear parts are identified as:

• Dust seals	• Stripped threads/bolts (aluminium, titanium, magnesium or steel)	• Handlebar grips	• Spokes
• Bushings	• Brake sleeves	• Shifter grips	• Free hubs
• Air sealing o-rings	• Brake pads	• Jockey wheels	• Aero bar pads
• Glide rings	• Chains	• Disc brake rotors	• Corrosion
• Rubber moving parts	• Sprockets	• Wheel braking surfaces	• Tools
• Foam rings	• Cassettes	• Bottomout pads	• Motors
• Rear shock mounting hardware and main seals	• Shifter and brake cables (inner and outer)	• Bearings	• Batteries
• Upper tubes (stanchions)		• Bearing races	
		• Pawls	
		• Transmission gears	

**Notwithstanding anything else set forth herein**, this warranty is limited to one year for all electronic and electronic related components including motors, controllers, battery packs, wiring harnesses, switches, and chargers. The battery pack and charger warranty does not include damage from power surges, use of improper charger, improper maintenance, or such other misuse.

This warranty shall not cover damages caused by the use of parts of different manufacturers.

This warranty shall not cover damages caused by the use of parts that are not compatible, suitable and/or authorised by SRAM for use with SRAM components.

This warranty shall not cover damages resulting from commercial (rental) use.

## TABLE OF CONTENTS

<b>RISE 40 FRONT HUB SERVICE.....</b>	<b>5</b>
TOOLS NEEDED FOR SERVICE.....	5
<b>DISASSEMBLY .....</b>	<b>6</b>
REASSEMBLY .....	8
<b>RISE 40 REAR HUB SERVICE .....</b>	<b>11</b>
TOOLS NEEDED FOR SERVICE.....	11
DISASSEMBLY.....	12
REASSEMBLY .....	14
<b>WHEEL BUILD &amp; SPOKE REPLACEMENT.....</b>	<b>18</b>
TOOLS NEEDED FOR SERVICE.....	18
REPLACEMENT PARTS .....	18
<b>FRONT WHEEL LACING .....</b>	<b>19</b>
<b>REAR WHEEL LACING .....</b>	<b>21</b>



# **SAFETY FIRST!**

We care about YOU. Please, always wear your safety glasses and protective gloves when servicing SRAM products.

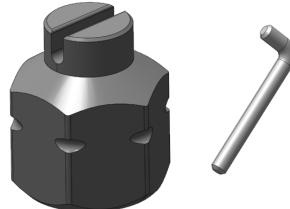
Protect yourself! Wear your safety gear!

## RISE 40 & X9 FRONT HUB SERVICE

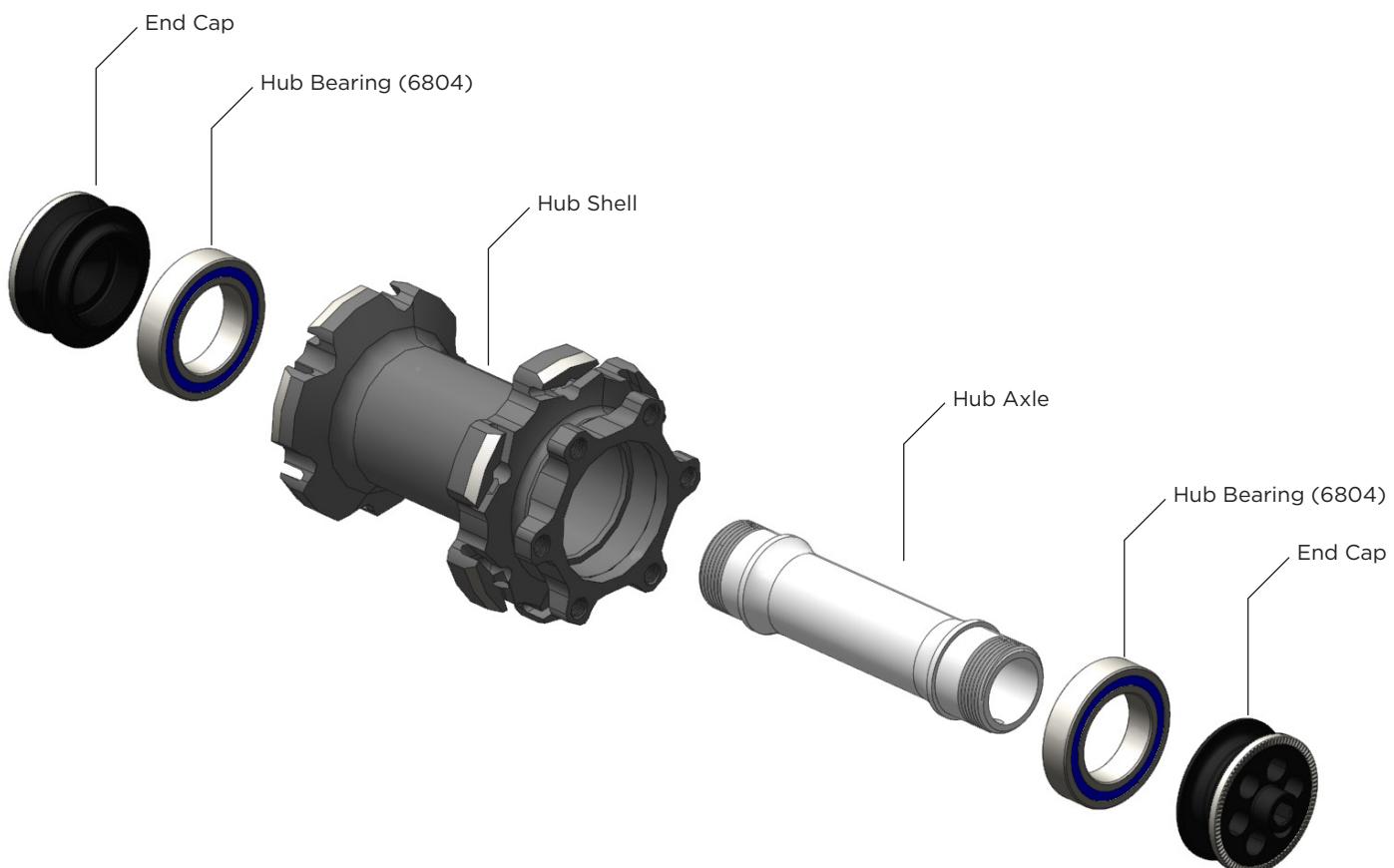
### TOOLS NEEDED FOR SERVICE

Safety glasses  
Nitrile gloves  
(2) 5 mm hex wrenches  
24 mm open end wrench, or adjustable wrenchz  
Wheels Manufacturing Press-1 Sealed Bearing Press Kit  
(2) 6804 Adapters, and (1) 6806 Over-Axle Adapter from Press-1 Kit  
Wheels Manufacturing Press-3 Over Axle Bearing Adapter Kit  
(2) 6804 Over-Axle Adapters from Press-3 Kit  
Enduro Universal Blind Hole Bearing Puller Set BBT-100  
(Slide Hammer Bearing Puller)

Lithium based grease  
Grease brush  
Isopropyl alcohol and clean rags  
Rubber or plastic mallet  
Bench vise  
Axe vise  
Rise 40 Front Hub Service Tool



For spare part number information, please refer to the Spare Parts Catalog available on our website at [www.sram.com](http://www.sram.com).



## DISASSEMBLY

**1** Insert a 5 mm hex wrench into each of the hub end caps. Turn both wrenches counter-clockwise to free one of the end caps from the axle. Unthread the end cap and set it aside.



5 mm      5 mm

**2** Insert the small end cap removal pin into the holes in the axle.

Insert the slotted end cap removal tool into the axle so that the slot aligns with the pin.



small pin



slotted tool

**3** Use a 24 mm wrench (or adjustable wrench) to hold the slotted end cap removal tool in place while you use a 5 mm hex wrench to turn the end cap counter-clockwise. Unthread the end cap and set it aside. Remove the end cap removal tools from the axle.



24 mm      5 mm

**4** Tap the non-drive side end of the axle with a rubber mallet to remove the drive side bearing and axle assembly from the hub shell.



**5** Install the axle in a vice with plastic soft jaws (or wrap with a rag) so that the axle is suspended by the non-drive side bearing. Tap the axle with a rubber mallet to dislodge the bearing from the axle.

**NOTICE**

When you clamp the axle into a vise, use plastic soft jaws (or wrap with a rag) to prevent damage to the axle.



**6** Insert the 20 mm slide hammer bearing puller slotted attachment through the non-drive side bearing, and tighten it inside the bearing.

Thread the shaft of the bearing puller into the attachment. Forcefully pull back on the slide of the bearing puller to remove the bearing and hub seal from the hub shell.

Remove the bearing from the slide hammer bearing puller.



## REASSEMBLY

**7** Clean the interior of the hub shell with isopropyl alcohol and a clean rag.



**8** Press a new bearing into the non-drive side of the hub shell by hand.



**9** Install a 6804 bearing press adapter and a new bearing onto the bearing press. Slide the threaded rod of the bearing press through the non-drive side of the hub shell and out of the drive side.

Install a 6806 adapter onto the threaded rod, and then install the bearing press handle.

Turn the bearing press handle clockwise to press the bearing into the hub until it stops. Do not overtighten the bearing press.



**10** Insert one end of the axle into drive side of the hub shell and press it into the non-drive side bearing by hand.



**11** Press a new bearing onto the drive side end of the axle by hand.



**12** Install a 6804 bearing press adapter and a 6804 Over-Axle adapter onto the bearing press. Slide the threaded rod of the bearing press through the non-drive side end of the axle and out of the drive side of the axle.

Install another 6804 Over-Axle adapter and a 6804 adapter onto the threaded rod, and then install the bearing press handle.

Turn the bearing press handle clockwise to press the bearing into the hub until it is hand-tight. Do not overtighten the bearing press.



**13** Apply grease to the face of non-drive side bearing and the face of the drive side bearing.



**14** Thread the end caps onto the axle by hand. Insert a 5 mm hex wrench into each of the end caps. Turn both wrenches clockwise to tighten the end caps to 6 N·m (53 in-lb).



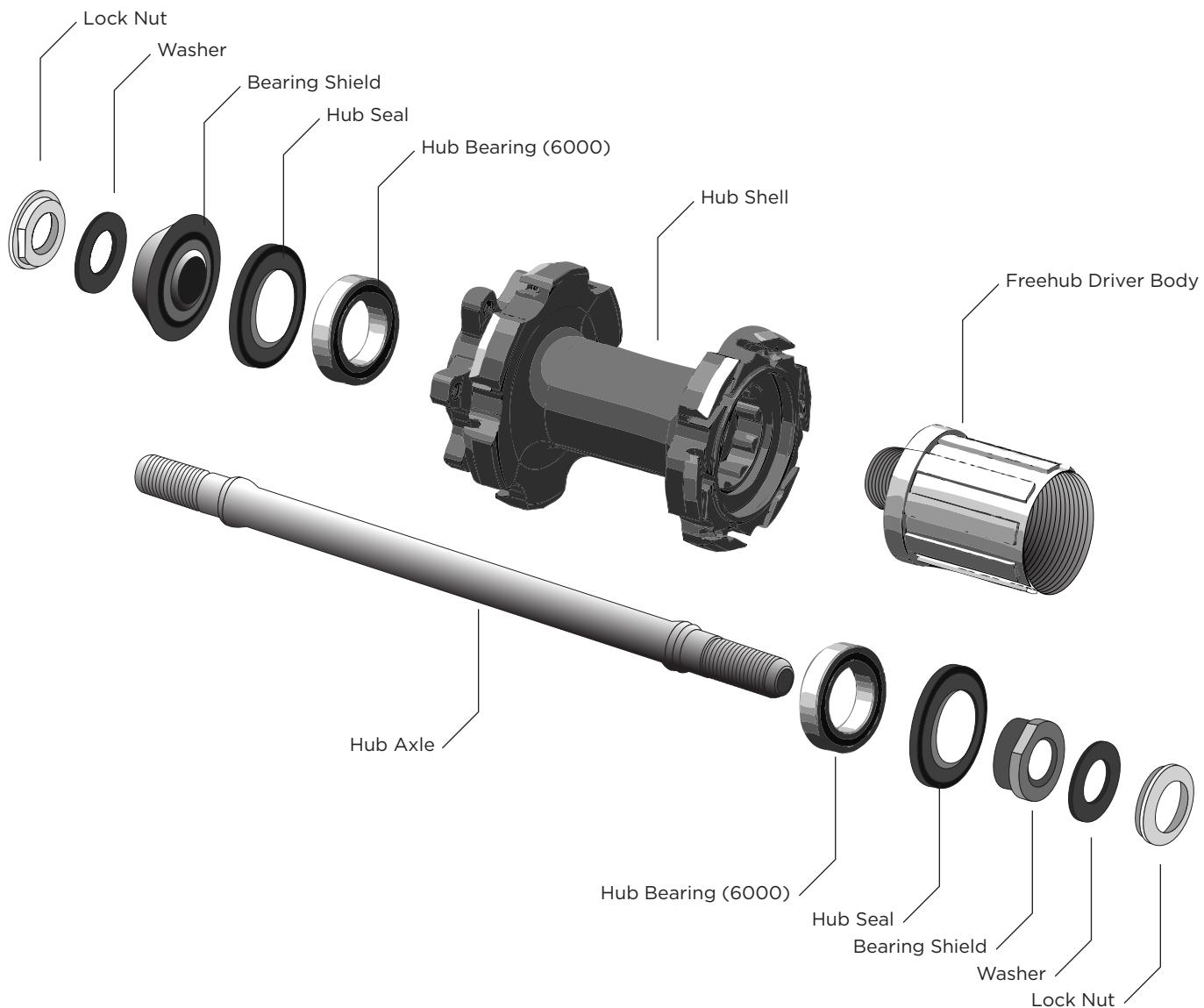
## RISE 40 REAR HUB SERVICE

### TOOLS NEEDED FOR SERVICE

Safety glasses  
Nitrile gloves  
15 mm, 17 mm, 19 mm cone wrenches  
11 mm hex wrench  
Wheels Manufacturing Press-1 Sealed Bearing Press Kit  
(1) 6000 Adapters, and (1) 6805 Over-Axle Adapter from Press-1 Kit  
Enduro Universal Blind Hole Bearing Puller Set BBT-100  
(Slide Hammer Bearing Puller)

Lithium based grease  
Grease brush  
Isopropyl alcohol and clean rags  
Rubber or plastic mallet  
Bench vise  
Plastic soft jaws

For spare part number information, please refer to the Spare Parts Catalog available on our website at [www.sram.com](http://www.sram.com).

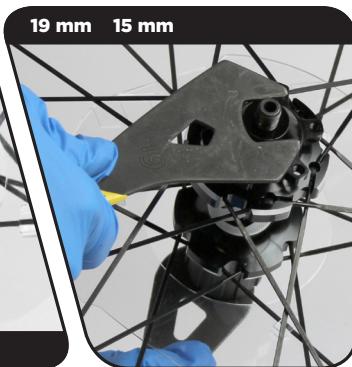


## DISASSEMBLY

**1** Use a 19 mm cone wrench to hold the non-drive side bearing shield in place. Use a 15 mm cone wrench to turn the lock nut counter-clockwise to free it from the axle. Unthread the lock nut, remove it and the washer, and set them aside.



**2** Hold the drive side lock nut in place with a 15 mm cone wrench. Use a 19 mm cone wrench to remove the non-drive side bearing shield and set it aside.



**3** Tap the non-drive side end of the axle with a rubber mallet to remove the drive side bearing and axle assembly from the hub shell.



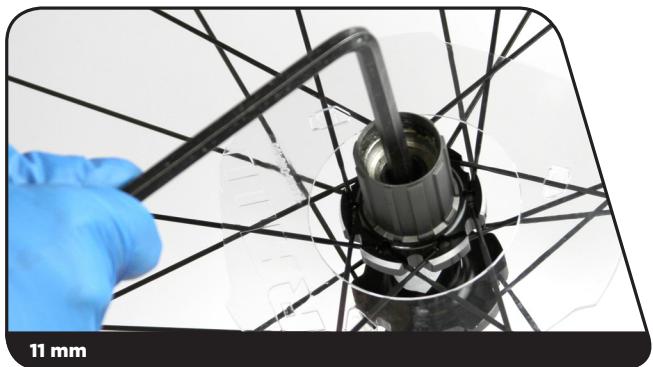
**4** Insert the 10 mm slide hammer bearing puller slotted attachment through the non-drive side bearing, and tighten it inside the bearing.

Thread the shaft of the bearing puller into the attachment, and then forcefully remove the bearing and hub seal from the hub shell.

Remove the bearing and hub seal from the slide hammer bearing puller.



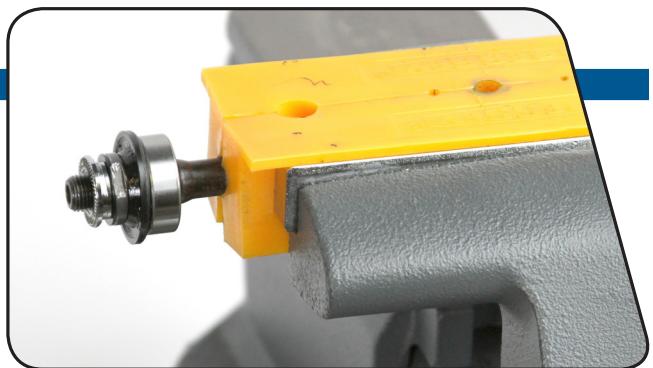
**5** Insert an 11 mm hex wrench into the freehub driver body, then turn the wrench counter-clockwise to unthread the driver body from the hub shell.



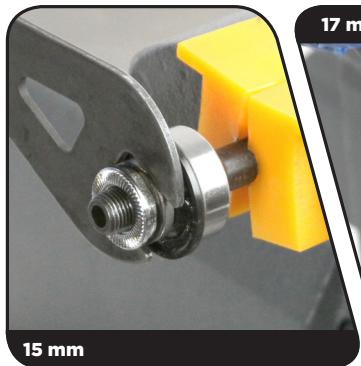
**6** Clamp the axle in a vice with soft jaws.

**NOTICE**

When you clamp the axle into a vice, use plastic soft jaws to prevent damage to the axle.



**7** Use a 17 mm cone wrench to hold the axle nut in place. Use a 15 mm cone wrench to turn the lock nut counter-clockwise to free it from the axle. Remove the lock nut and washer, and set them aside.

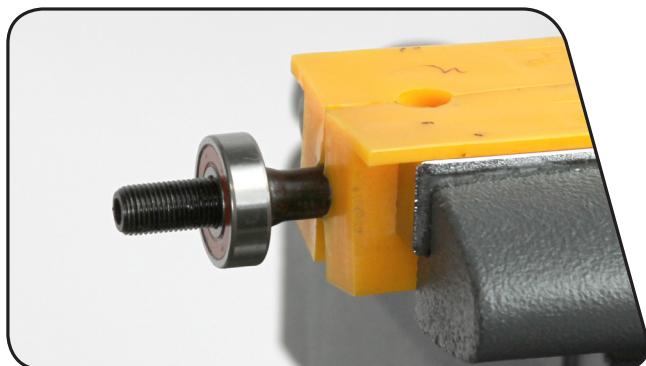


**8** Use a 17 mm cone wrench to turn the bearing shield counter-clockwise to free it from the axle. Remove the drive side hub seal and bearing from the axle.



## REASSEMBLY

**9** Install a new bearing onto the drive side end of the axle.



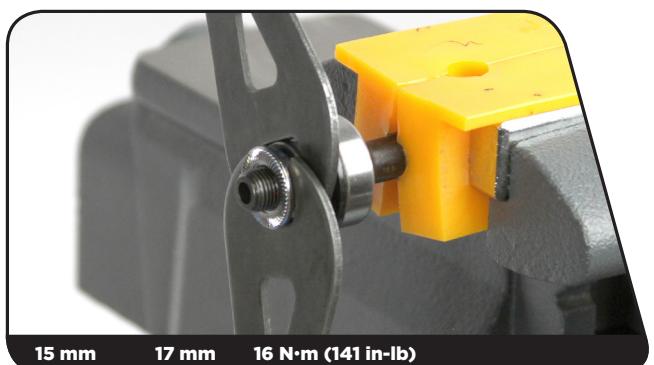
**10** Apply grease to the bearing face, then install the seal onto the axle and onto the bearing, with the conical side of the seal facing away from the bearing.



**11** Thread the axle nut onto the drive side end of the axle until it goes through the seal, then use a 17 mm cone wrench to tighten the axle nut against the bearing.



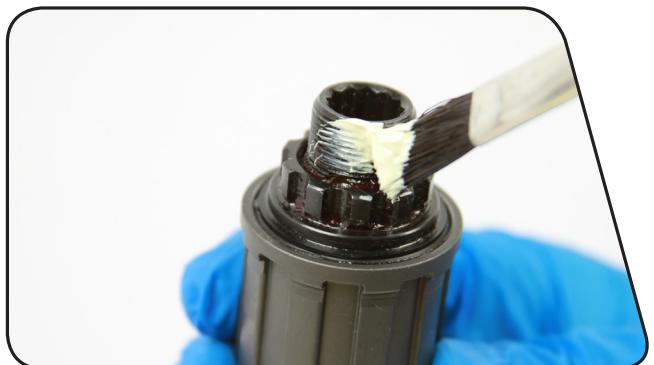
**12** Install the washer onto the axle, and then thread on the lock nut. Use a 17 mm cone wrench to hold the axle nut in place. Use a 15 mm cone wrench to turn the lock nut clockwise to tighten it to 16 N·m (141 in-lb).



**13** Clean the interior of the hub shell with isopropyl alcohol and a clean rag.



**14** To replace the freehub driver body, first apply grease to the threads and the splines of the driver body.



**15** Insert the freehub driver body into the hub shell, being careful to align the splines of the freehub driver body with those in the hub shell.

Insert an 11 mm hex wrench into the freehub driver body, then turn the wrench clockwise to thread the driver body from the hub shell, and tighten to 25 N•m (221 in-lb).



**16** Press a new bearing into the non-drive side end of the hub shell by hand.



**17** Install a 6000 bearing press adapter onto the bearing press. Slide the threaded rod of the bearing press through the non-drive side end of the hub shell and out of the freehub driver body.

Install a 6805 adapter onto the threaded rod, and then install the bearing press handle.

Turn the bearing press handle clockwise to press the bearing into the hub until it stops. Do not overtighten the bearing press.



**18** Apply grease to the non-drive side bearing face. Press the hub seal onto the non-drive side bearing by hand, with the stepped side of the seal facing away from the bearing.



**19** Slide the axle assembly through the freehub driver body until the non-drive side end of the axle comes through the hub shell and non-drive side bearing.



**20** Thread the bearing shield onto the non-drive side end of the axle until it contacts the hub seal, then use a 19 mm cone wrench to tighten the bearing shield against until it is snug, but the axle still turns easily.



**21** Install the washer onto the axle, and thread the lock nut onto the axle. Hold the non-drive side bearing shield in place with a 19 mm cone wrench, and use a 15 mm cone wrench to tighten the lock nut to 16 N·m (141 in-lb).



**22** There should be a small amount of side-to-side play in the hub when it is properly adjusted. If there is no play, loosen the non-drive side lock nut, and slightly loosen the non-drive side bearing shield. Re-tighten the lock nut to 16 N·m (141 in-lb).

## RISE 40 142 THRU AXLE REAR HUB SERVICE

### TOOLS NEEDED FOR SERVICE

Safety glasses	Lithium based grease
Nitrile gloves	Grease brush
17 mm cone wrench	Isopropyl alcohol and clean rags
12 mm hex wrench	Rubber or plastic mallet
Wheels Manufacturing Press-1 Sealed Bearing Press Kit (1) 6003, (1) 6803, (1) 6806, (1) 6903 Adapters from Press-1 Kit	Bench vise
Wheels Manufacturing Press-3 Sealed Bearing Press Kit (1) 17 mm Spacer, (1) 6803 Over-Axle Adapter, and (1) 6903 Over-Axle Adapter from Press-3 Kit	Axle vise
Enduro Universal Blind Hole Bearing Puller Set BBT-100 (Slide Hammer Bearing Puller)	

For spare part number information, please refer to the Spare Parts Catalog available on our website at [www.sram.com](http://www.sram.com).

## DISASSEMBLY

**1** Clamp the non-drive side end cap in an axle vise. A rag can be used to protect the end cap.

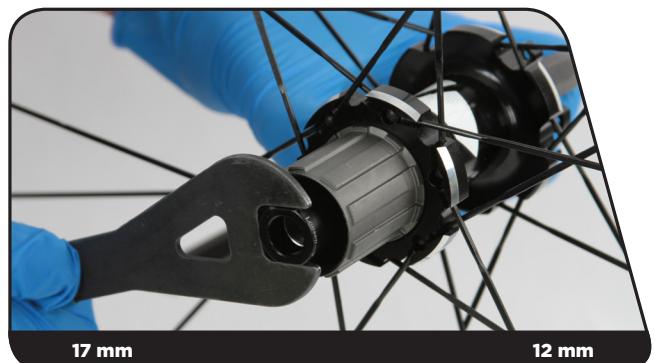


**2** Pull up on the wheel to remove the non-drive side end cap from the hub.



**3** Insert a 12 mm hex wrench into the non-drive side end of the axle.

Use a 17 mm cone wrench to turn the drive side end cap **clockwise** to remove it from the axle.



**4** Pull the freehub driver body away from the hub shell to remove it from the axle.



**5** Remove the freehub driver spacer from the axle.



**6** Tap the drive side end of the axle with a rubber mallet to remove the non-drive side bearing and axle assembly from the hub shell.



**7** Insert the 17 mm slide hammer bearing puller slotted attachment through the non-drive side bearing, and tighten it inside the bearing.

Thread the shaft of the bearing puller into the attachment, and then forcefully remove the bearing from the hub shell.

Remove the bearing from the slide hammer bearing puller.



**8** Remove the bearing seal and the bearing from the axle by hand. Clean the axle with isopropyl alcohol and a clean, lint-free rag.



## REASSEMBLY

**9** Clean the interior of the hub shell with isopropyl alcohol and a clean rag.



**10** Install a 6803 bearing press adapter and a new bearing onto the bearing press. Slide the threaded rod of the bearing press through the non-drive side end of the hub shell and out of the drive side.

Install a 6806 adapter onto the threaded rod, and then install the bearing press handle.

Turn the bearing press handle clockwise to press the bearing into the hub shell until it is hand-tight. Do not overtighten the bearing press.



**11** Apply grease to the non-drive side bearing face. Press the hub seal onto the non-drive side bearing by hand, with the stepped side of the seal facing away from the bearing.



**12** Slide the axle through the drive side end of the hub shell, and press it into the non-drive side bearing until the end of the axle comes through the bearing.



**13** Install a 17 mm OA spacer, a 6803 OA adapter, and a 6903 adapter, and a new bearing onto the bearing press. Slide the threaded rod of the bearing press through the non-drive side end of the axle and out of the drive side of the axle.

Install a 6003 and a 6903 adapter onto the threaded rod, and then install the bearing press handle.

Turn the bearing press handle clockwise to press the bearing into the hub until it is hand-tight. Do not overtighten the bearing press.



**14** Slide the freehub driver spacer onto the axle with the chamfered end away from the hub shell.



**15** To replace the freehub driver body, first apply grease to the threads and the splines of the driver body.



**16** Slide the freehub driver body onto the axle. Squeeze together the pawls of the freehub driver, and insert it into the hub shell, being careful to align the splines of the freehub driver body with those in the hub shell.

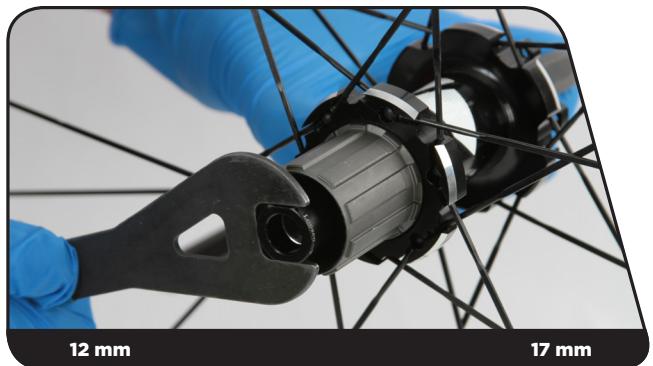


**17** Make sure the non-drive side end cap o-ring is free of grease, and then press the end cap back onto the axle by hand.



**18** Insert a 12 mm hex wrench into the non-drive side end of the axle.

Use a 17 mm cone wrench to turn the drive side end cap **counter-clockwise** to remove it from the axle.



## WHEEL BUILD & SPOKE REPLACEMENT

This portion of the service guide covers general wheel build and spoke replacement. As there are many different methods for spoke tensioning, the following information provides the final spoke tension you should achieve using your preferred method for spoke tensioning.

### TOOLS NEEDED FOR SERVICE

Safety glasses

Bladed spoke adjustment tool (ex. Park Tool® BSH-4)

Spoke wrench for 5.5 mm external spoke nipples

Tensiometer with tension conversion chart

Truing stand

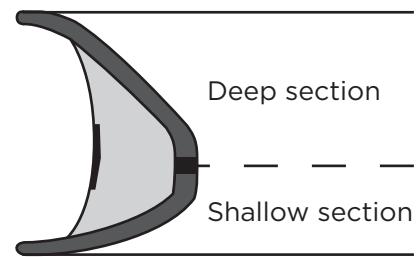
### REPLACEMENT PARTS

For part numbers, please refer to the SRAM Wheels Spare Parts List in the Service section of [www.sram.com](http://www.sram.com).

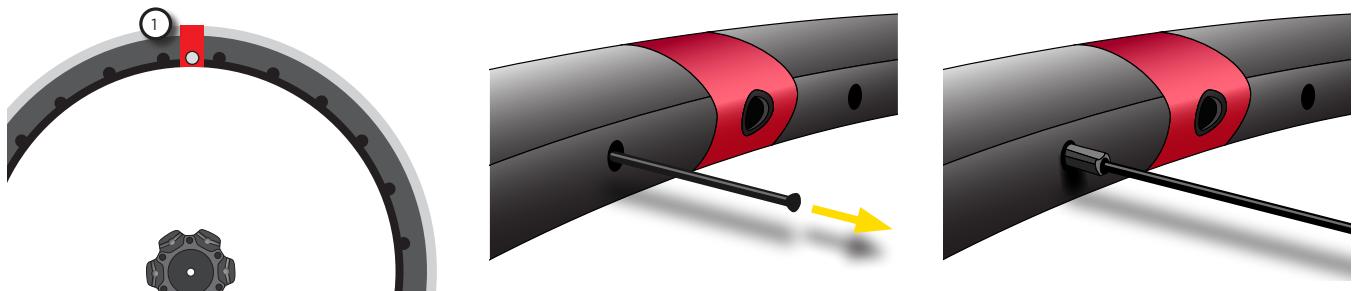
	Spoke Count	Spoke Length 26	Spoke Length 29	Final Spoke Tension
Front Wheel	Drive side	12	264 mm	85 kgf $\pm$ 10 kgf (833 N $\pm$ 98 N)
	Non-drive side	12		
Rear Wheel	Drive side	12	264 mm	100 kgf $\pm$ 10 kgf (980 N $\pm$ 98 N)
	Non-drive side	12		

## FRONT WHEEL LACING

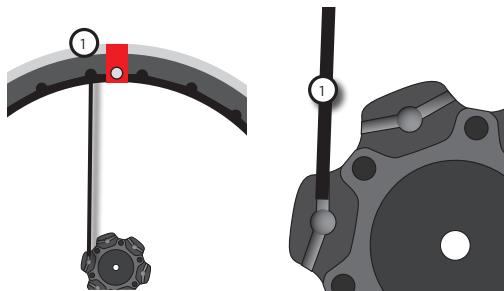
1. Orient the rim so that the deep section of the rim is facing up, and the brake rotor mounting tabs of the hub (the non-drive side of the hub) are also facing up.



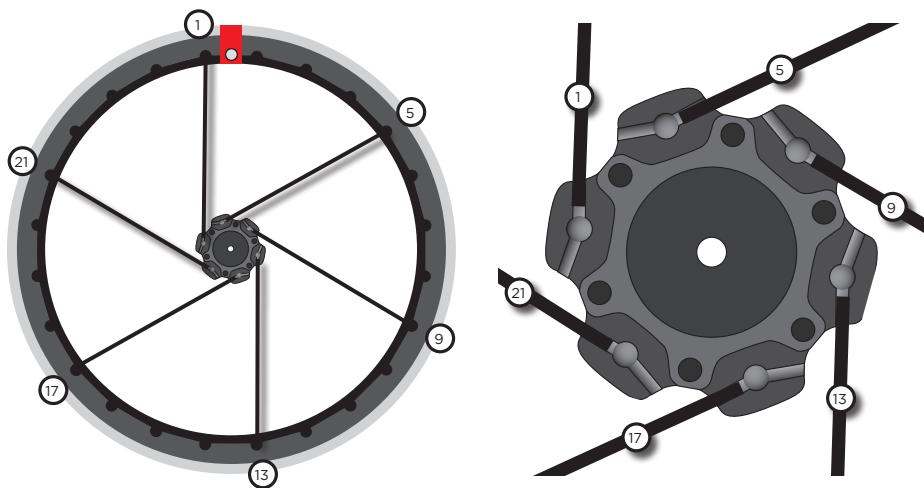
2. Thread a spoke nipple a few turns onto each of the twenty four 266 mm spokes.
3. Align the SRAM logo on the hub with the valve stem hole in the rim.
4. Locate spoke hole ① on the spoke bed. Insert the flared end of the spoke through spoke hole ①,



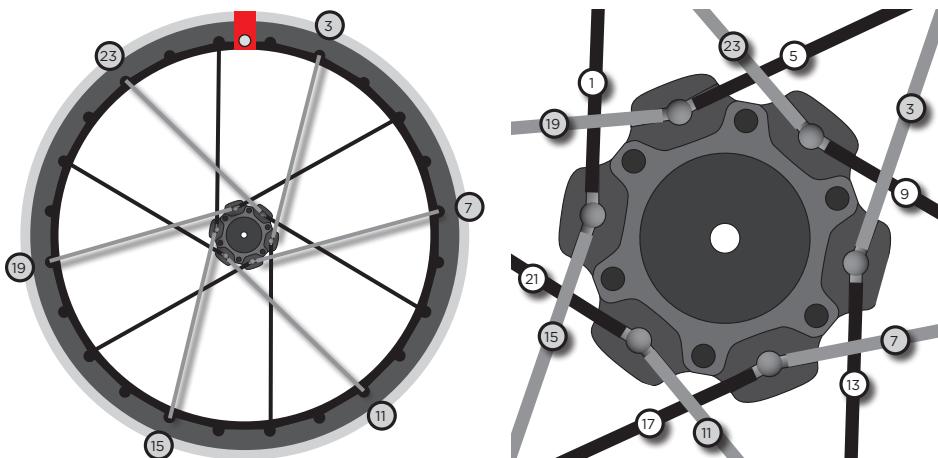
5. Install the flared end of spoke ① into the corresponding slot on the non-drive side hub flange (the side with disc rotor tabs), as illustrated.



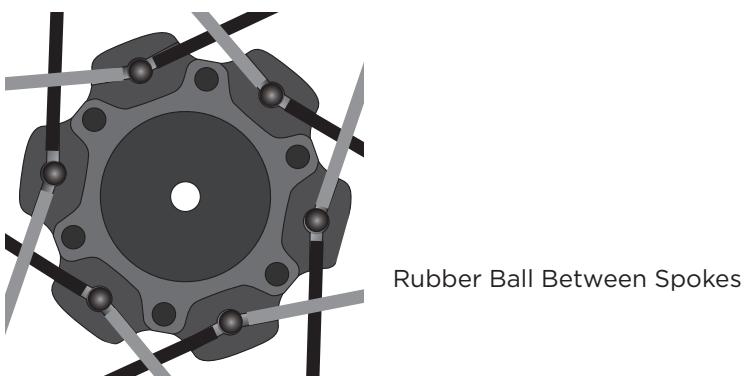
6. Repeat steps 4 & 5, following the illustrated lacing pattern, to install spokes ⑤ ⑨ ⑯ ⑰ ⑳.



7. Repeat steps 4 & 5, following the illustrated lacing pattern, to install spokes ③ ⑦ ⑪ ⑯ ⑯ ⑯ ⑯.

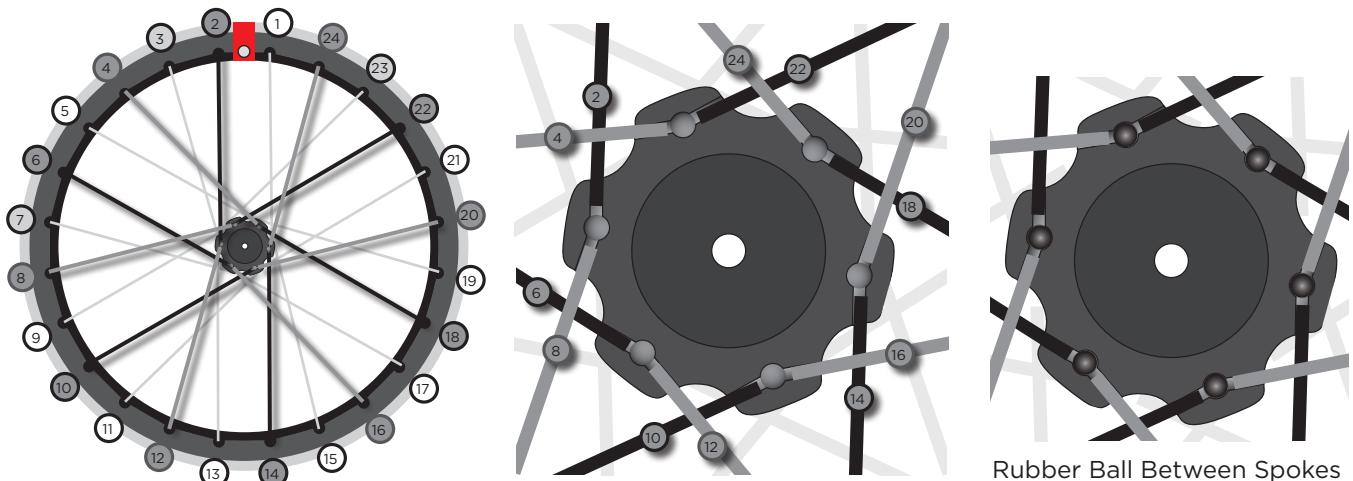


8. Press a rubber spacer ball between each of the spoke heads in the non-drive side hub flange.



9. Carefully turn the wheel over so that the drive side end of the hub is facing up.

10. Repeat steps 4-8, following the illustrated lacing pattern, to install the drive side spokes.



11. Use a spoke wrench to turn each of the the **drive side spokes** in 1/2 turn increments until the **drive side spoke tension** is at approximately 30-40% of the final value: **85 kgf ± 10 kgf (833 N ± 98 N)**.

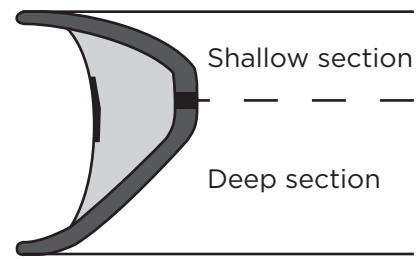
12. Install the wheel into a truing stand. Use a spoke wrench to turn each of the the **non-drive side spokes** in 1/2 turn increments to increase the spoke tension until the **non-drive side spoke tension** is at approximately 30-40% of the final value: **100 kgf ± 10 kgf (980 N ± 98 N)**.

13. Continually check for roundness (vertical movement) and trueness (side-to-side movement):  
Control wheel roundness by tightening/loosening the drive side spokes.  
Control wheel trueness by tightening/loosening the non-drive side spokes.

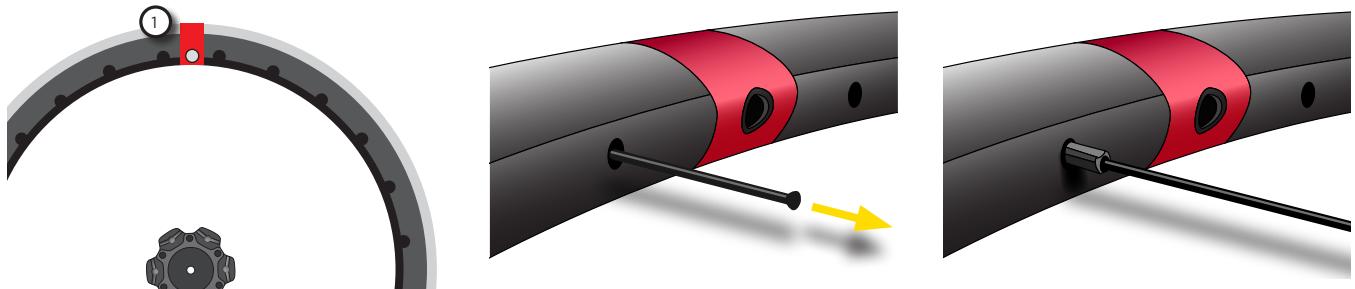
14. Continue tightening both drive side and non-drive side spokes in 1/8 - 1/4 turn increments until you achieve the final **drive side** spoke tension value of **85 kgf ± 10 kgf (833 N ± 98 N)**, a final **non-drive side** spoke tension value of **100 kgf ± 10 kgf (980 N ± 98 N)**, and the wheel is round and true.

## REAR WHEEL LACING

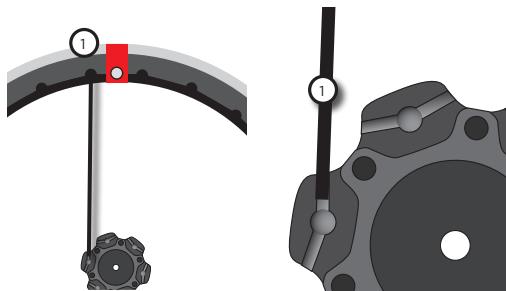
1. Orient the rim so that the shallow section of the rim is facing up, and the brake rotor mounting tabs of the hub (the non-drive side of the hub) are also facing up.



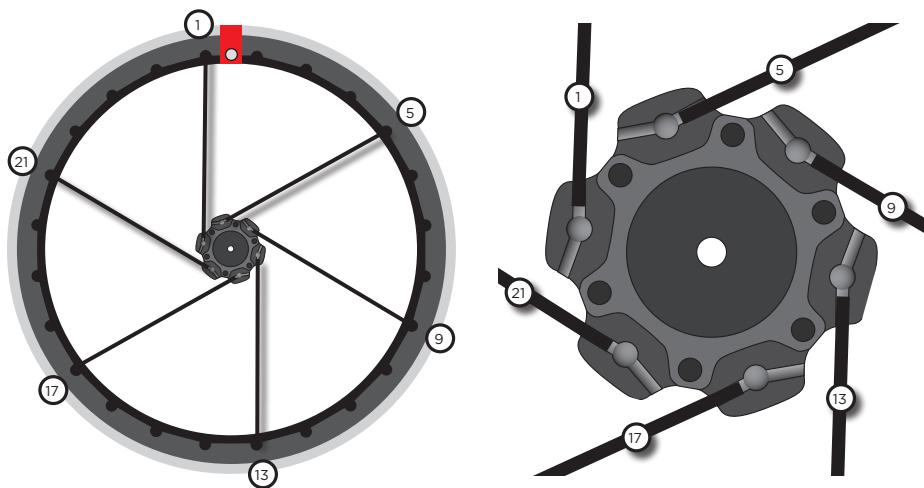
2. Thread a spoke nipple a few turns onto each of the twenty four 266 mm spokes.
3. Align the SRAM logo on the hub with the valve stem hole in the rim.
4. Locate spoke hole ① on the spoke bed. Insert the flared end of the spoke through spoke hole ①,



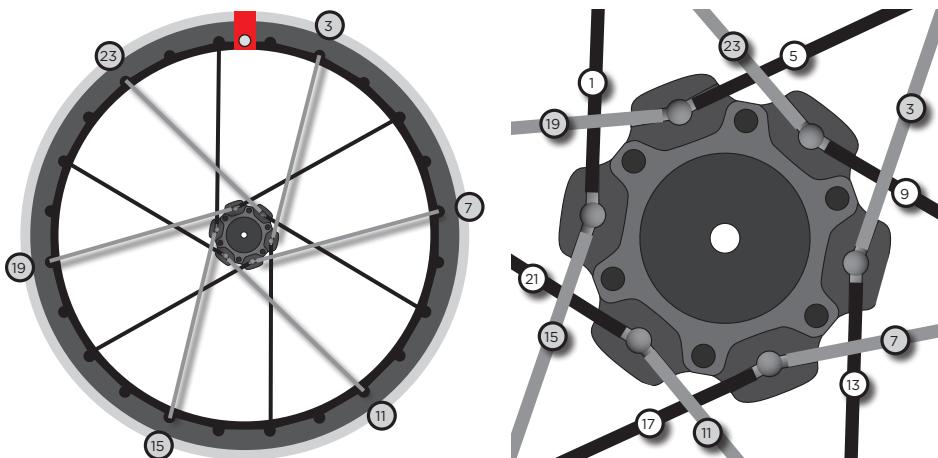
5. Install the flared end of spoke ① into the corresponding slot on the non-drive side hub flange (the side with disc rotor tabs), as illustrated.



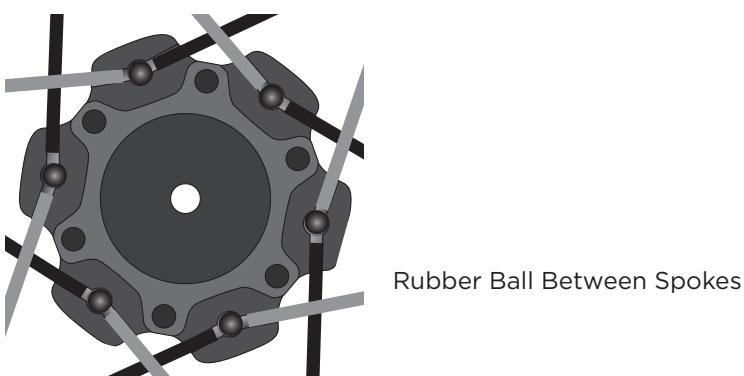
6. Repeat steps 4 & 5, following the illustrated lacing pattern, to install spokes ⑤ ⑨ ⑯ ⑰ ⑲.



7. Repeat steps 4 & 5, following the illustrated lacing pattern, to install spokes ③ ⑦ ⑪ ⑯ ⑯ ⑯ ⑯.

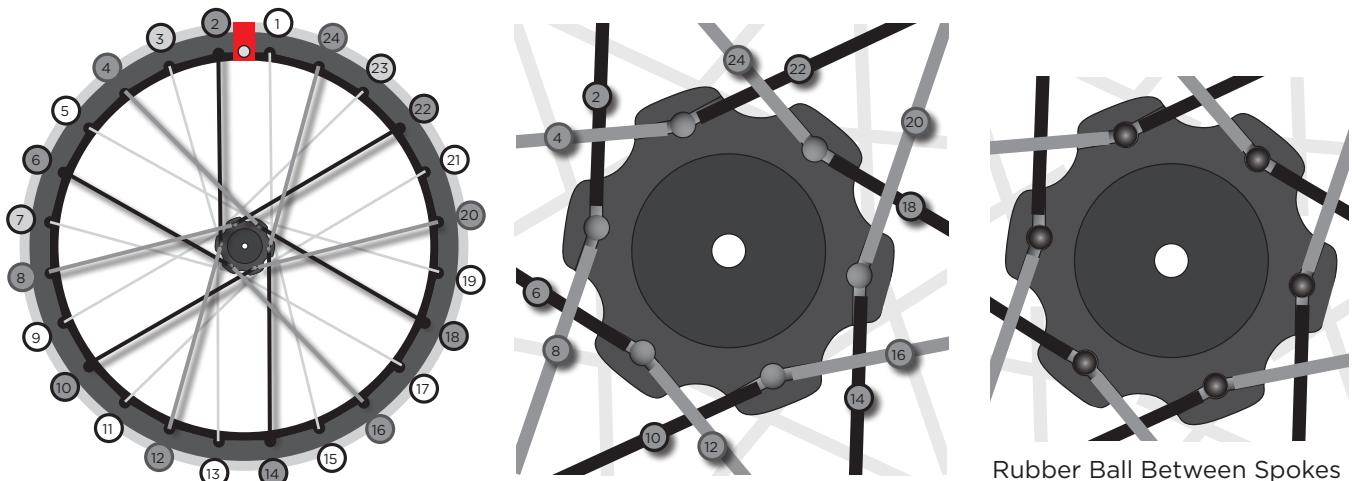


8. Press a rubber spacer ball between each of the spoke heads in the non-drive side hub flange.



9. Carefully turn the wheel over so that the drive side end of the hub is facing up.

10. Repeat steps 4-8, following the illustrated lacing pattern, to install the drive side spokes.



11. Use a spoke wrench to turn each of the the **drive side spokes** in 1/2 turn increments until the **drive side spoke tension** is at approximately 30-40% of the final value: **85 kgf ± 10 kgf (833 N ± 98 N)**.

12. Install the wheel into a truing stand. Use a spoke wrench to turn each of the the **non-drive side spokes** in 1/2 turn increments to increase the spoke tension until the **non-drive side spoke tension** is at approximately 30-40% of the final value: **100 kgf ± 10 kgf (980 N ± 98 N)**.

13. Continually check for roundness (vertical movement) and trueness (side-to-side movement):  
Control wheel roundness by tightening/loosening the drive side spokes.  
Control wheel trueness by tightening/loosening the non-drive side spokes.

14. Continue tightening both drive side and non-drive side spokes in 1/8 - 1/4 turn increments until you achieve the final **drive side** spoke tension value of **85 kgf ± 10 kgf (833 N ± 98 N)**, a final **non-drive side** spoke tension value of **100 kgf ± 10 kgf (980 N ± 98 N)**, and the wheel is round and true.

**SRAM**<sup>®</sup>  
www.sram.com